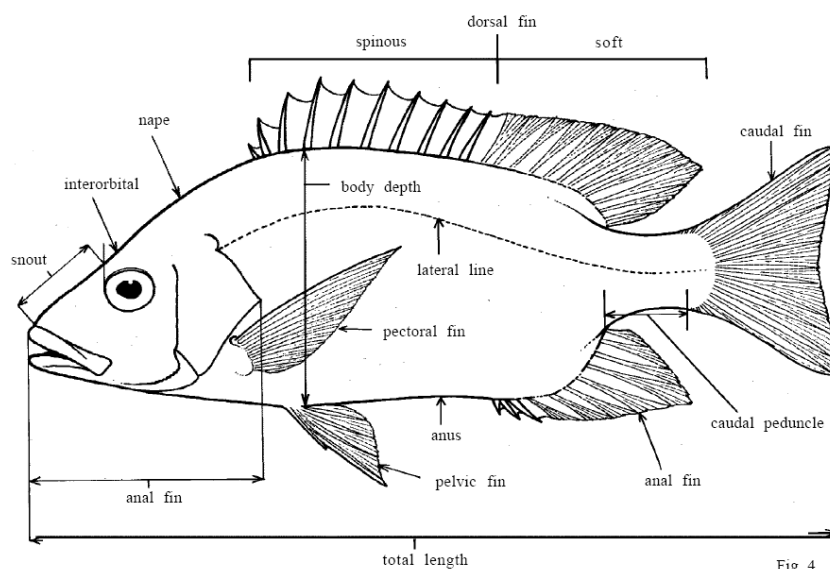


FIELD IDENTIFICATION OF LUTJANIDS AVAILABLE IN INDIAN WATERS

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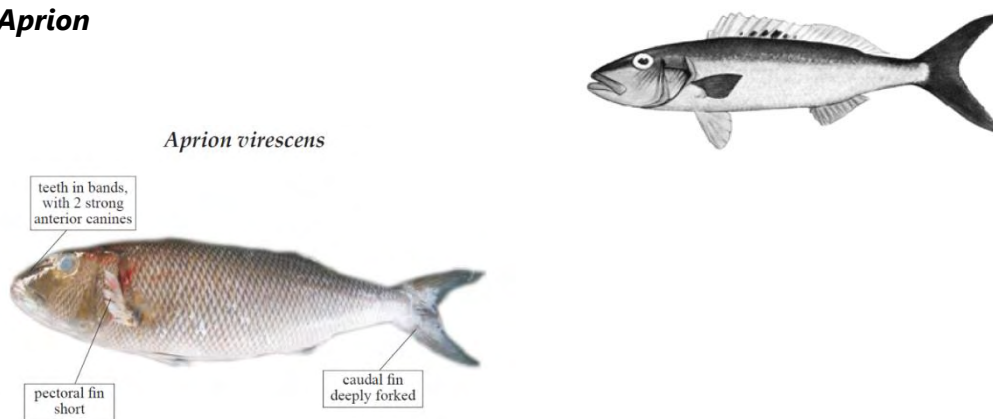
Family Lutjanidae – SNAPPERS

Body deep, mouth large, protrusible, anterior part of head without scales; some rows of scales on cheek, pre-opercle and on gill cover.



The Main genera

Aprion



Green jobfish

D X, 11; A III, 8; Gr 14 -15 (lower limb); P 17; LI 48 -50

Elongate fish with rounded body; clear horizontal groove in front of eye; teeth in both jaws in bands, with 2 strong canines anteriorly; vomerine tooth patch crescent-shaped. Pectoral fins short, rounded, about equal to snout length; caudal fin deeply forked, lobes pointed; scales absent on dorsal and anal fins. Moderate-sized scales, on lateral line; scale rows on back parallel with lateral line. Body colour dark green to bluish or blue-grey.

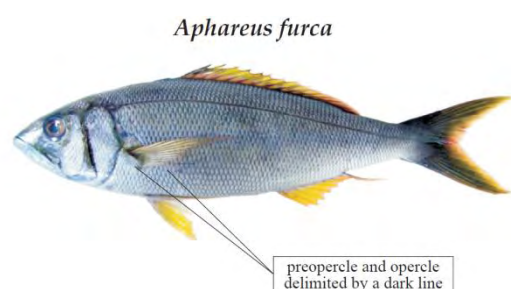
Genus *Aphaerus*

Medium-sized snappers; minute teeth in jaws, canines, vomerine absent; premaxillae not protractile; gill openings extending well forward to front of eye; interorbital space flattened. Continuous dorsal fin, not incised near junction of spinous and soft portions, with 10 spines and 11 soft rays; anal fin with 3 spines and 8 soft rays; pectoral fins long, slightly shorter than head, with 15 - 16 rays; dorsal and anal fins scaleless; caudal fin forked. Scales small, about 65 - 75 in lateral line. Body bluish grey, sometimes with a silvery sheen on lower sides and belly.

Species: *Aphareus furca* (Lacepède 1801)- Small toothed jobfish

D X, 11; A III, 8, P 15 -16, LI 65 -75; Gr 16 -18

Elongate compressed body, with lower jaw protruding; maxilla extending to below middle of eye; interorbital space flattened;



teeth in jaws small, disappearing with age; roof of mouth toothless; scale rows on back parallel with lateral line.

Colour: Back and upper sides purplish-brown; blue-grey on sides; a silvery sheen on head and lower sides; edges of pre-opercle and opercle outlined with black; fins whitish to yellow-brown.

Aphareus rutilans - Rusty jobfish

D X, 11; A III, 8, P 15 -16, LI 70 - 73; Gr 15 - 16

Elongate compressed body, with lower jaw protruding; maxilla extending to below middle of eye; interorbital space flattened; **teeth small, forming narrow uniform band in each jaw**; roof of mouth toothless; gill rakers on lower limb (including rudiments) 30 to 34; scale rows on back parallel with lateral line. Body colour blue-greyish reddish; fins yellowish red, pelvics and anal fin sometimes whitish; margin of maxilla black.



Lipocheilus carnolabrum

D X, 10; A III, 8, P 15 -16, LI 65 -75; Gr 16 -18

Mouth large, adults with a thick, fleshy protrusion at anterior end of upper lip. Vomerine tooth patch V-shaped, without a medial posterior extension; no teeth on tongue. Maxilla scaleless. Interorbital space flattened to convex. Dorsal and anal fins scaleless. Last dorsal and anal soft rays not produced. Pectoral fins long, reaching beyond level of anus. Scale rows on back parallel to lateral line. Upper part of head brown; yellowish or pinkish on sides; a silvery sheen on ventral portion of body.

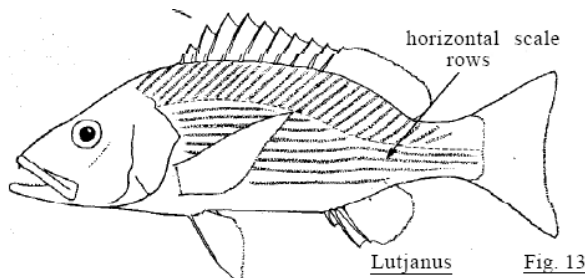
Lipocheilus carnolabrum



Upper lip with a median fleshy protrusion, well developed in adults spines of dorsal and anal fins strong, very robust in large adults ***Lipocheilus carnolabrum***

Genus *Lutjanus*

Small oblong, slender and fusiform sized snappers with relatively deep bodies. Mouth large, protractile; with pointed, conical teeth in jaws arranged in one or more rows, with an outer series of canine teeth, some of which, particularly those at front of jaws, are generally enlarged and fanglike; vomerine tooth patch V-shaped or crescentic, with or without a medial posterior extension, or diamond-shaped; interorbital space convex; pre-opercle serrate, its lower margin with a shallow to deep notch, and opposite portion of interopercle sometimes with a bony knob, most strongly developed in species with a deep pre opercular notch. Dorsal fin continuous, often with a slight notch between the spinous and soft portions, with 10 or 11 spines and, 11 to 16 soft rays; anal fin with 3 spines and 7 to 10 soft rays; pectoral fins with 15 to 18 rays; dorsal and anal fins scaled; caudal fin truncate or emarginate, rarely forked.



Colour: Extremely variable, but often consisting of a reddish, yellow, grey, or brown background and a pattern of darker stripes or bars; frequently with a large blackish spot on upper sides below anterior dorsal soft rays.

Key to the genera of Lutjanidae occurring in the area (adapted and modified from FAO)

Notes: Species names are given when a genus includes a single species. Counts of gill rakers include rudiments, if present.

- 1a. Dorsal and anal fins without scales; dorsal fin with X spines and 10 or 11 soft rays
..... **2**
- 1b. Soft dorsal and anal fins with scales or sheathed with scales basally; dorsal fin with X to XII spines and 11 to 19 soft rays **10**
- 2a. Maxilla with scales **3**
- 2b. Maxilla without scales **5**
- 3a. Spinous portion of dorsal fin deeply incised at its junction with soft portion; dorsal fin with X spines and 11 (very infrequently 10) soft rays ***Etelis***

3b. Spinous portion of dorsal fin not deeply incised at its junction with soft portion; dorsal fin with X spines and 10 soft rays **4**

4a. Last soft ray of both dorsal and anal fins shorter than next to last soft ray

Paracaesio

5a. Premaxillae essentially not protrusible, attached to snout at symphysis by a frenum **6**

5b. Premaxillae protrusible, not attached to snout by frenum **7**

6a. Vomer without teeth (small juveniles may have minute teeth on vomer); teeth in jaws very small, no caniniform teeth; pectoral fins somewhat shorter than head; lateral surface of maxilla smooth ***Aphareus***

7a. Dorsal fin with X spines and 11 (rarely 10) soft rays; last soft ray of both dorsal and anal fins longer than next to last soft ray **8**

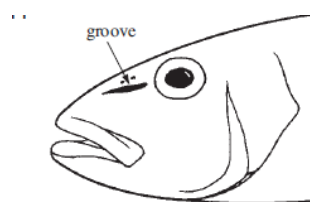
7b. Dorsal fin with X spines and 10 soft rays; last soft ray of both dorsal and anal fins shorter than next to last soft ray **9**

8a. Groove present on snout below nostrils; pectoral fins less than 1/2 length of head ***Aprion virescens***

8b. No groove on snout; pectoral fins a little shorter than head to somewhat longer than head ***Pristipomoides***

9a. Upper lip with a median fleshy protrusion, well developed in adults spines of dorsal and anal fins strong, very robust in large adults ***Lipocheilus carnolabrum***

9b. Upper lip without a median fleshy protrusion ***Paracaesio***



Paracaesio



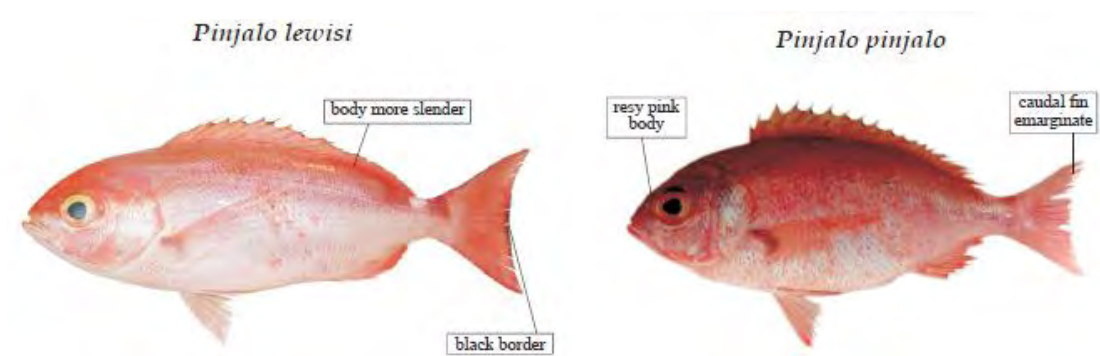
Lipocheilus

10. Vomer with teeth; dorsal fin with X to XII spines and 11 to 16 soft rays; none of anterior soft dorsal-fin rays produced as filaments **11**

11a. First gill arch with 60 or more gill rakers on lower limb **Macolor**

11b. First gill arch with 20 or fewer gill rakers on lower limb **12**

12a. Upper and lower profiles of head equally rounded; eye set toward middle of head; mouth rather small, somewhat upturned; no fang-like canines at anterior ends of jaws **Pinjalo**



12b. Upper and lower profiles of head not equally rounded, upper profile evenly rounded to steeply sloped, and lower profile flattened; eye closer to upper profile of head than to lower; mouth larger, usually not upturned; some fang-like canines usually present at anterior ends of jaws **Lutjanus**

Key to the species of *Aphareus* occurring in Indian waters

Remark on key character: counts of gill rakers include rudiments, if present.

1a. First gill arch with 6 to 12 gill rakers on upper limb and 15 to 18 on lower limb (total 22 to 28); colour of body varying from steel blue to purplish brown

Aphareus furca

1b. First gill arch with 16 to 19 gill rakers on upper limb and 32 to 35 on lower limb (total 49 to 52); colour of body varying from blue-grey or mauve to

Aphareus rutilans

Key to the species of *Etelis* occurring in Indian waters

1a. Total gill rakers on first gill arch 17 to 22. ***Etelis carbunculus***

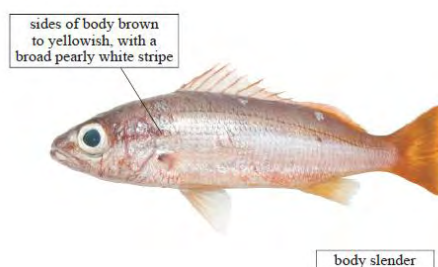
1b. Total gill rakers on first gill arch 23 to 36 upper lobe of caudal fin longer. **2**

Key to the Indo-Pacific species of *Lutjanus* (modified from FAO)

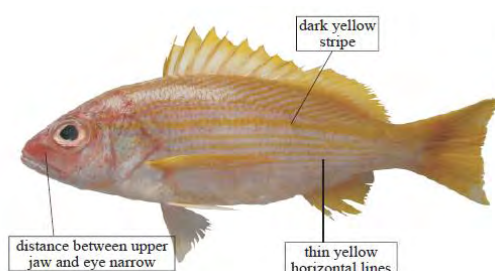
1. Pre-orbital space (distance between upper jaw and eye) very narrow, body slender, dorsal spines usually 11, soft dorsal rays 12.

Body depth 3.5 to 3.8 times in standard length; tongue without teeth; a dark band from snout to caudal fin base and two pearly spots above lateral line, soft portion of dorsal fin

L. biguttatus



Body depth 2.9 to 3.3 times in standard length; tongue with a patch of fine granular teeth; colour generally silvery-white with a broad yellow stripe along middle of side to caudal fin base and narrow yellowish lines, corresponding with longitudinal scale rows (eastern Africa to western Pacific)



Lutjanus lutjanus

3a. Yellow coloured body with a series of 4 or 5 longitudinal blue stripes on sides which become brown when preserved.

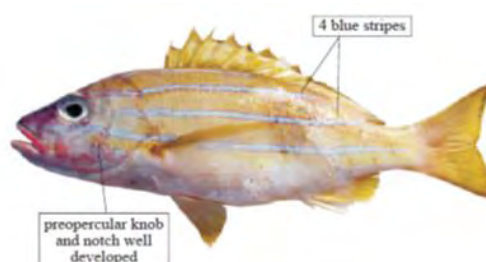
3b. Colour not as above 6

4a. Dorsal-fin spines XI or XII ***Lutjanus bengalensis***

4b. Dorsal-fin spines X 5

5a. Four stripes on side, with white whitish belly sometimes with thin grey lines; scale rows on cheek 5 or 6; upper pectoral-fin rays darkish

Lutjanus kasmira



5b. Five stripes on side, belly not whitish, thin lines absent; scale rows on cheek

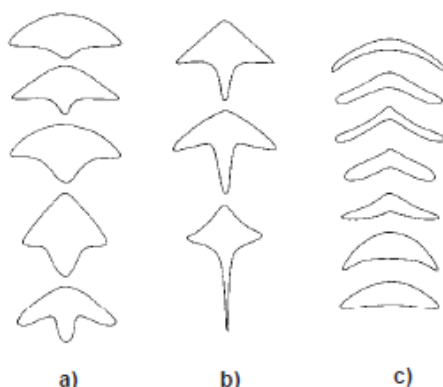
10 or 11; upper pectoral-fin rays pale ***Lutjanus quinquelineatus***

6a. Longitudinal scale rows above lateral line obliquely positioned. 7

6b. Longitudinal scale rows above lateral line entirely horizontal or some rows rising obliquely from below middle part of dorsal fin

7a. Vomerine tooth patch triangular or diamond-shaped with a medial posterior extension **8**

7b. Vomerine tooth patch crescentic to triangular without a posterior extension . . . **11**

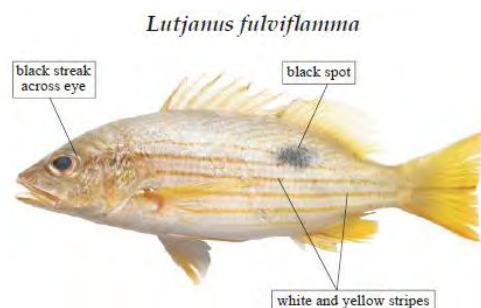


Shapes of the vomerine tooth patch

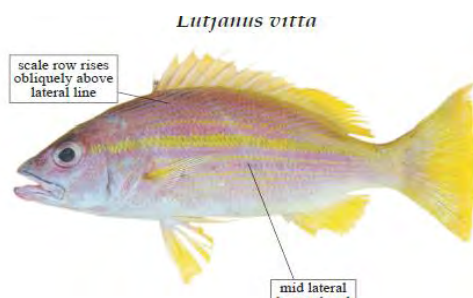
8a. Soft dorsal-fin rays usually 14; a relatively wide gap between temporal scale bands of each side; spot on upper side situated mainly above lateral line; young specimens with series of 4 to 7 broad stripes (blackish to orange or yellow-brown in life) on side, these persisting as thin stripes in adults from the western Indian Ocean ***Lutjanus russelli***

8b. Soft dorsal-fin rays usually 13; little or no gap between temporal scale bands of each side; spot on upper side situated mostly below lateral line or bisected by it, spot sometimes very elongated; young specimens without series of 4 to 7 broad dark stripes on side

Lutjanus fulviflamma



9a.



Mid-lateral stripe usually broader and darker than other stripes on side; transverse scale rows on cheek 7 to 10

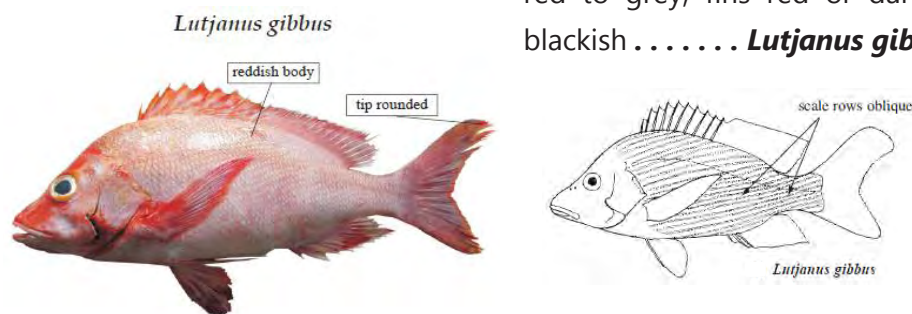
. ***Lutjanus vitta***

9b. Mid-lateral stripe not broader or darker than other stripes on side, yellow in life and faint or absent in preserved specimens; transverse scale rows on cheek usually 6 or 7 (occasionally 8) **12**

10a. Predorsal scales extending to mid-interorbital level; a blunt, flattened spine on upper margin of opercle, above the main centrally located spine; interorbital width 4.4 to 6.5 in head length; total gill rakers on first gill arch (including rudiments) 18 to 21 ***Lutjanus madras***

11. Total gill rakers (including rudiments) on first gill arch (including rudiments) 25 to 30 **12**

12. Dorsal fin with X spines and 13 or 14 soft rays; scale rows below lateral line ascending obliquely caudal fin distinctly forked with rounded lobes; colour deep red to grey, fins red or dark brown to blackish ***Lutjanus gibbus***



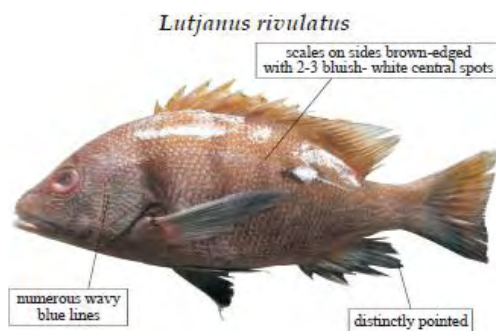
13a. Soft anal-fin rays 10; dorsal fin with XI spines and 16 rays; colour pattern consisting of 3 dark brown to red transverse bars (may be indistinct in large adults) ***Lutjanus sebae***

13b. Soft anal-fin rays 8 or 9; dorsal-fin elements variable, the fin with X or XI spines and 12 to 16 soft rays; colour not as above **14**

14a. Pre-opercular notch distinctive (moderately to well developed. **15**

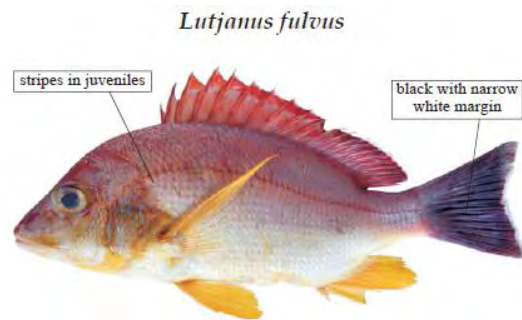
14b. Pre-opercular notch not distinct **21**

15a. Soft dorsal-fin rays 15 or 16; body relatively deep, 2.1 to 2.4 times in standard length; head usually with numerous wavy lines (bluish in life); a chalky spot often present below junction of spinous and soft parts of dorsal fin, bordered with black in juveniles, but lost with age; lipstuck in large adults ***Lutjanus rivulatus***



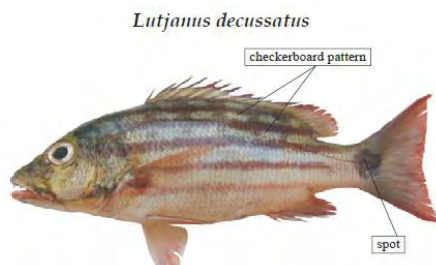
15b. Soft dorsal-fin rays 13 or 14; body usually more slender, 2.3 to 2.8 times in standard length; colour not as above; lips not thick in adults **16**

- 16a. Caudal fin and distal third of dorsal fin blackish or dusky brown with a narrow white border ***Lutjanus fulvus***

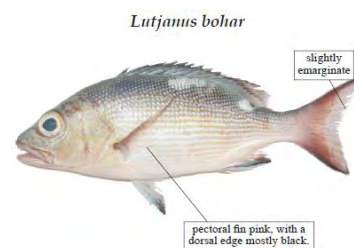
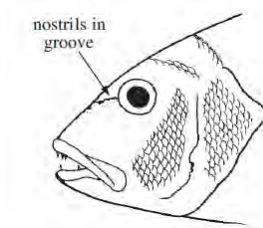


- 16b. Caudal fin yellow or grey basally and yellow distally without narrow white border; distal third of dorsal fin not noticeably darker than remainder of fin . . **17**

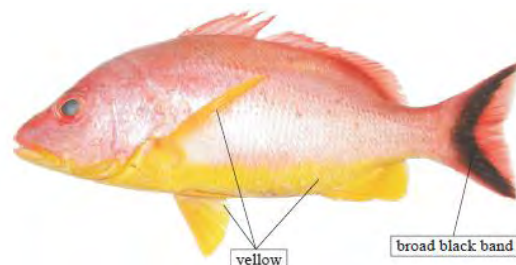
- 17a. Colour pattern consisting of a series of 5 dark stripes on whitish ground colour; 2 or 3 uppermost stripes crossed by dark vertical bars forming a network of light and dark squares; a large dark spot at base of caudal fin ***Lutjanus decussatus***



- 17b. Two whitish spots on upper back, anterior spot below last 4 dorsal-fin spines and posterior one under last 6 dorsal-fin rays and meeting that of other side across top of caudal peduncle; colour brown on upper back grading to tan or light brownish ventrally; dorsal and caudal fins dusky; outer portion of anal and pelvic fins distinctly blackish; upper third of pectoral fins dusky brown; tongue with a patch of fine granular teeth ***Lutjanus bohar***



- 18a. Caudal fin with a distinctive crescentic black marking, remainder of body and fins uniformly yellowish tan (yellow in life) with a silvery sheen on lower sides ***Lutjanus lunulatus***



- 18b. A black spot on upper side at level of lateral line below soft dorsal fin; rest of body and fins mainly pale; tongue with a patch of fine granular teeth, although sometimes absent in juveniles ***Lutjanus monostigma***

19a



Dorsal-fin spines XII; 5 - 6 yellow stripes; longitudinal rows of scales below lateral line which rise

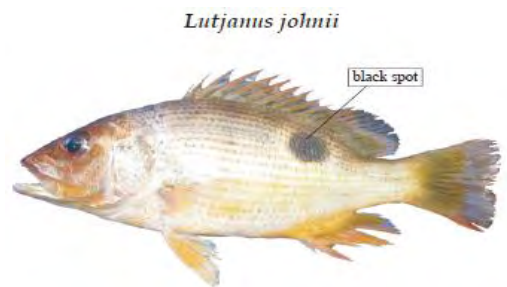
Lutjanus dodecacanthoides

19b Small mouth, length of maxilla less than distance between bases of last dorsal- and anal-fin rays some longitudinal scale rows below lateral line slanting obliquely in posterior direction toward dorsal profile; convex head profile ***Lutjanus erythropterus***



20a. Triangular vomerine tooth patch with medial posterior extension; narrow preorbital space, large prominent black spot, bisected by the lateral line below posterior part of spinous dorsal fin ***Lutjanus ehrenbergii***

21 A large black spot on upper back ground colour pale, each scale on side often with a brownish spot forming longitudinal rows on side ***Lutjanus johnii***



22 Body depth 2.5 to 2.9 times in standard length; least depth of caudal peduncle 3 to 3.5 times in head length; longitudinal scale rows on upper back parallel to lateral line anteriorly and some rows usually ascend obliquely below posterior dorsal fin spines



Lutjanus argentimaculatus

Key to genus *Macolor* species occurring in Indian waters (modified from FAO)

1a. First gill arch with 37 - 42 gill rakers on upper limb and 71 - 81 on lower limb (total 110 to 122); anal fin with III spines and 10



soft rays; long pointed pelvic fins in juveniles and short rounded pelvic fins in adults ***Macolor macularis***

Key to the species of *Paracaesio*

1a. Body dark purplish brown, with violet lines on body ***Paracaesio sordida***



3b. Caudal fin, upper part of caudal peduncle, and upper side of body to anterior end of dorsal fin yellow; rest of body mostly blue; pre-opercle almost always without scales ***Paracaesio xanthura***

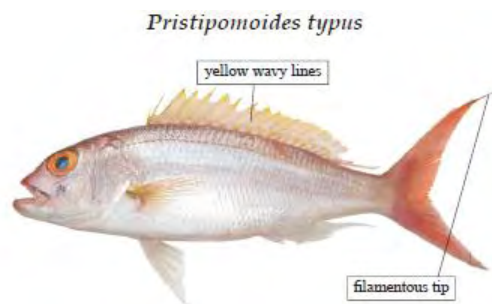
Key to the species of *Pristipomoides* occurring in Indian waters

1a. Lateral-line scales 48 to 50 **2**

1b. Lateral-line scales 57 to 74 **3**

2a. Two golden stripes bordered with blue on snout and cheek; transverse vermiculations on top of head. ***Pristipomoides multidens***

2b. Golden stripes absent on snout and cheek; longitudinal vermiculations on top of head present
Pristipomoides typus

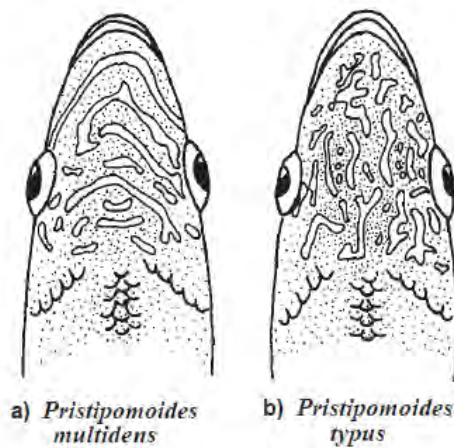


3a. Gill rakers on first gill arch 27 - 33; 67 to 74 lateral-line scales. **4**

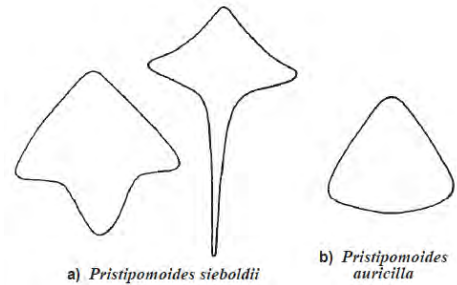
3b. Gill rakers on first gill arch 17 to 27; 57 to 67 lateral-line scales. **5**

4a. Backward prolongation in midline for the vomerine tooth patch; tongue with patch of teeth ***Pristipomoides sieboldii***

- 4b. Vomerine tooth patch triangular backward prolongation absent; teeth absent on tongue ***Pristipomoides auricilla***



Dorsal view of head



Vermiculations on head

- 5a. Lateral-line scales 63 to 67; side of body with alternating oblique red and yellow bars ***Pristipomoides zonatus***

- 5b. Total gill rakers on first gill arch 22 to 27; lateral-line scales 57 to 63; side of body without red and yellow bars; caniniform teeth at anterior ends of jaws. ***Pristipomoides filamentosus***

